Amendments to the Claims:

1. (Currently amended) A method for analyzing a dispersion comprising the following steps:

(a) collecting a set of original domain data relating to an attribute of the dispersion, wherein the attribute of the dispersion is transmittance of electromagnetic radiation through the dispersion and wherein the set of original domain data is comprised of a transmittance image representing distribution of transmittance of electromagnetic radiation through the dispersion over a spatial area;

(b) transforming the set of original domain data into a transformed set of original domain data, wherein the transformed set of original domain data is in the frequency domain; and

(c) characterizing the dispersion using the transformed set of original domain data.

2. (Original) The method as claimed in claim 1, further comprising the step of generating a frequency domain spectrum from the transformed set of original domain data, wherein the frequency domain spectrum expresses a parameter relating to the attribute of the dispersion as a function of frequency and wherein the characterizing step is performed using the frequency domain spectrum.

3. - 9. (Cancelled)

10. (Original) The method as claimed in claim 2 wherein the transforming step is comprised of transforming the set of original domain data in one dimension.

11. (Original) The method as claimed in claim 10, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

12. (Original) The method as claimed in claim 11 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in one dimension.

13. (Original) The method as claimed in claim 2 wherein the transforming step is comprised of transforming the set of original domain data in two dimensions.

14. (Original) The method as claimed in claim 13, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

15. (Original) The method as claimed in claim 14 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in two dimensions.

16. (Original) The method as claimed in claim 2 wherein the collecting step is comprised of collecting a plurality of subsets of original domain data so that the set of original domain data is comprised of the subsets of original domain data, wherein the subsets of original domain data are transformed into a plurality of subsets of transformed original domain data, and wherein the characterizing step is performed using the subsets of transformed original domain data.

17. (Original) The method as claimed in claim 16 wherein the frequency domain spectrum generating step is comprised of generating a frequency domain spectrum from each of the subsets of transformed original domain data in order to produce a plurality of frequency domain spectra and wherein the characterizing step is performed using the frequency domain spectra.

18. (Original) The method as claimed in claim 17 wherein the collecting step is comprised of collecting each of the subsets of original domain data at a different value of a dispersion characterizing variable so that the dispersion may be characterized with respect to the dispersion characterizing variable.

19. (Original) The method as claimed in claim 18 wherein the dispersion is comprised of oil and wherein the dispersion characterizing variable is an amount of solvent mixed with the oil.

20. (Original) The method as claimed in claim 18 wherein the dispersion is comprised of an emulsion comprising oil and water and wherein the dispersion characterizing variable is time.

21. (Original) The method as claimed in claim 18 wherein the dispersion is comprised of an emulsion comprising oil and water and wherein the dispersion characterizing variable is a ratio of the relative amounts of oil and water contained in the emulsion.

22. (Original) The method as claimed in claim 18 wherein the characterizing step is comprised of the step of generating from the frequency domain spectra an expression of the parameter relating to the attribute of the dispersion as a function of both frequency and the dispersion characterizing variable in order to characterize the dispersion with respect to the dispersion characterizing variable.

23. (Original) The method as claimed in claim 22 wherein the transforming step is comprised of transforming the set of original domain data in one dimension.

24. (Original) The method as claimed in claim 23, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

25. (Original) The method as claimed in claim 24 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in one dimension.

26. (Original) The method as claimed in claim 18 wherein the characterizing step is comprised of the step of integrating each of the frequency domain spectra between an upper selected frequency and a lower selected frequency, thereby obtaining a characterization number for each of the frequency domain spectra.

27. (Original) The method as claimed in claim 26 wherein the characterizing step is further comprised of the step of generating from the characterization numbers an expression of characterization number as a function of the dispersion characterizing variable in order to characterize the dispersion with respect to the dispersion characterizing variable.

28. (Original) The method as claimed in claim 27 wherein the characterizing step is further comprised of calculating a derivative of the expression of characterization number as a

function of the dispersion characterizing variable in order to characterize the dispersion with respect to the dispersion characterizing variable.

29. (Original) The method as claimed in claim 27 wherein the transforming step is comprised of transforming the set of original domain data in one dimension.

30. (Original) The method as claimed in claim 29, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

31. (Original) The method as claimed in claim 30 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in one dimension.

32. (Original) The method as claimed in claim 27 wherein the transforming step is comprised of transforming the set of original domain data in two dimensions.

33. (Original) The method as claimed in claim 32, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

34. (Original) The method as claimed in claim 33 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in two dimensions.

35. (Cancelled)

36. (Currently amended) The method as claimed in claim 2 ~~35~~ wherein the transforming step is comprised of transforming the set of original domain data in one dimension along a sample line.

37. (Original) The method as claimed in claim 36, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

38. (Original) The method as claimed in claim 37 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in one dimension.

39. (Currently amended) The method as claimed in claim 2 ~~35~~ wherein the transforming step is comprised of transforming the set of original domain data in one dimension along a plurality of sample lines.

40. (Original) The method as claimed in claim 39, further comprising the step of conditioning the set of original domain data before the transforming step in order to reduce at least one unwanted component in the set of original domain data.

41. (Original) The method as claimed in claim 40 wherein the conditioning step is comprised of calculating a derivative of the set of original domain data in one dimension.

42. (Original) The method as claimed in claim 41 wherein the step of generating the frequency domain spectrum from the transformed set of original domain data is comprised of determining from the plurality of sample lines an average value for the parameter relating to the attribute of the dispersion as a function of frequency.

43. - 45. (Cancelled)

46. (New) The method as claimed in claim 18 wherein the dispersion characterizing variable is selected from a group of dispersion characterizing variables consisting of time, composition of the dispersion, temperature, pressure, kinetic energy of the dispersion, and combinations thereof.

47. (New) The method as claimed in claim 46 wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to a stability of the dispersion.

48. (New) The method as claimed in claim 47 wherein the dispersion is comprised of crude oil, asphaltene particles and a solvent.

49. (New) The method as claimed in claim 48 wherein the dispersion exhibits a formation of a second liquid phase and wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to the formation of the second liquid phase.

50. (New) The method as claimed in claim 48 wherein the asphaltene particles exhibit separation from the dispersion and wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to the separation of the asphaltene particles from the dispersion.

51. (New) The method as claimed in claim 50 wherein the asphaltene particles exhibit a plurality of stages of separation from the dispersion and wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to the stages of separation of the asphaltene particles from the dispersion.

52. (New) The method as claimed in claim 50 wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to an onset of precipitation of the asphaltene particles from the dispersion.

53. (New) The method as claimed in claim 48 wherein the dispersion characterizing variable is selected from a group of dispersion characterizing variables consisting of composition of the dispersion, temperature, pressure, and combinations thereof, and wherein composition of the dispersion is comprised of a concentration of the solvent in the dispersion.

54. (New) The method as claimed in claim 53 wherein the solvent is selected from a group of solvents consisting of ethane, propane, butane, pentane and carbon dioxide.

55. (New) The method as claimed in claim 52 wherein the solvent is carbon dioxide.

56. (New) The method as claimed in claim 46 wherein the dispersion is comprised of an emulsion comprising oil and water.

57. (New) The method as claimed in claim 56 wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to a stability of the dispersion.

58. (New) The method as claimed in claim 56 wherein the dispersion exhibits drying properties and wherein characterizing the dispersion is comprised of characterizing the dispersion with respect to the drying properties of the dispersion.

59. (New) The method as claimed in claim 58 wherein the dispersion characterizing variable is time.